

# LARL

## Introduction

LARL (Lawrence Association for Responsible Lighting) supports an ordinance requiring installation of a color temperature of no greater than 3,000K for outdoor LED lights, including streetlights, **from this point forward**. As compared to the current 4,000K fixtures, the 3,000K is a “warmer color” which is much safer for drivers, much better for our health, better for wildlife, significantly reduces light pollution, and is overwhelmingly preferred by citizens.

The best available evidence from the American Medical Association (AMA) shows that continued widespread use of 4,000K outdoor lighting is no longer justified or sustainable.

**Driving:** 4,000K streetlights can actually be worse for traffic safety than 3,000K lights

- The AMA warned that rich blue light in the 4,000K lights could cause drivers “disability glare” resulting in “road hazard”. Its best practice therefore is to use 3,000K.
- For people with cataracts or macular degeneration, or during fog or rain, visibility with 4,000K lights is worse than with lower temperature lights.
- Dark adaptation is much worse with 4000K lights, which creates a hazard driving in and out of lighted areas.

**Health:** The AMA warns cities to steer clear of 4,000K outdoor lighting whenever possible because of health concerns.

- The AMA specifically warns against using these lights because the blue rich light, in this case from 4,000K lighting, is associated with sleep disorders, mood disturbances, cardiovascular disease, several types of cancer, and other problems.
- Acceptance of this concern is now so widespread that Apple and Microsoft last year adopted as standard a setting that automatically decreases the blue spectrum in the evening. We should all use these settings.
- Many studies suggest that the blue spectrum light, like that in the 4,000K lights, accelerates macular degeneration, the leading U.S. cause of vision loss.

## 4,000K lights are worse for wildlife

- It is alarming to read AMA’s warning NOT to use 4,000K lights because 60% of animals may be “adversely” affected by exposure to excessive nighttime electrical lighting.
- Scientific research going back 30 years supports evidence that feeding and reproduction of everything from insects to mammals is affected, even at low light levels.
- This is an especially big concern for citizens of Lawrence, as we are close to the Baker Wetlands.

## **4,000K outdoor lights are much worse for our city's lighting footprint**

- The AMA discourages use of the 4,000K light, because it causes much more light pollution than 3,000K.
- The International Dark Sky Association likewise warns against use of 4,000K lighting, favoring 3,000K or less.
- Light pollution is a rapidly increasing problem throughout the United States with the LED lights. The 3,000K are far more protective of our dark skies.
- Our community has an astronomical observatory at the Discovery Center that requires skies free from light pollution. It deserves our protection from light pollution.

**Community preferences** are overwhelmingly in favor of the less glaring 3,000K.

- Many in our community are voicing concern about harsh glare from 4,000K lights.
- In cities that sample community reaction, there is a marked preference for 3,000K.
- Davis, CA, due to public demand, removed a large portion of their existing 4000K LED lighting and replaced them with lower temperature LEDs.
- In other communities that are dissatisfied by the 4,000K streetlights, some have likened them to creating a “prison yard atmosphere.”

## **Costs are identical**

- As the AMA points out, the costs are almost identical between 3,000K and 4,000K LEDs.
- If costs are the same, why not choose the safer product?

## **The rest of the ordinance provision**

This provision sets outer limits to keep light directed downward (“beam angles”), and sets an outer limit on excessive brightness. These provisions are standard, and should be immediately implemented.

## **The tariff**

Once the ordinance is enacted by the city, we believe that Westar will be interested in working with the city to provide the customer with its stated preference of fixtures. The “tariff” (setting forth the rates Westar charges for the streetlights) will determine the rate, which should be standard. Further, Westar may work with the city to resolve any conflicts between the ordinance and the tariff.